DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AB66

Endangered and Threatened Wildlife and Plants; Proposed Rule To Reclassify the Plant Pediocactus sileri From Endangered to Threatened

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) proposes to reclassify *Pediocactus sileri* (Siler pincushion cactus) from endangered to threatened. This rule is proposed under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act), and is based on a thorough review of all information currently available for the species. The proposed change in classification reflects an improved understanding of the species' status and the fulfillment of reclassification criteria stated in the Siler Pincushion Cactus Recovery Plan (U.S. Fish and Wildlife Service 1986). The action will not significantly alter the protection of this species under the Act. The Service seeks data and comments from the public on this proposal.

DATES: Comments from all interested parties must be received by May 10, 1993. Public hearing requests must be received by April 26, 1993.

ADDRESSES: Comments and materials concerning this proposal should be sent to the Field Supervisor, U.S. Fish and Wildlife Service, 3616 West Thomas Road, suite 6, Phoenix, Arizona 85019. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Sue Rutman, at the above address (Telephone 602/379-4720).

SUPPLEMENTARY INFORMATION:

Background

Pediocactus sileri (Siler pincushion cactus) grows on gypsum soils in a scenic area of southwestern Utah and northwestern Arizona. When mature, this globose or cylindrical cactus is about 4–5 inches (10–13 centimeters) tall and has spines that almost match the gray soil where it commonly occurs. The central spines, which are usually less than 1.25 inches (3.18 centimeters) long, have a purplish or black tip when young, and point upwards. The flowers are yellow and appear in the spring. Plants may be single stemmed or clustered.

Pediocactus sileri is found on gypsiferous clay to sandy soils apparently high in soluble salts (Hughes 1991). Plants occur on soils derived from the Moenkopi Formation. About 90 percent of known plants occur on the Shnabkaib Member of the formation (Gierisch 1989). The grayish Shnabkaib Member is composed of 65 percent siltstone, 25 percent gypsum, and 10 percent limestone and dolomite (Stewart, et al. 1972). Most of the remaining plants are found on the Middle Red Member of the formation, which is a reddish siltstone with thin to thick layers of gypsum. Plants can be found growing on soil that ranges from shallow to 22 inches (56 centimeters) deep (Gierisch 1961).

Pediocactus sileri populations occur in a variety of plant communities. Most commonly, the species is found in the Great Basin Desert Shrub Biotic Community. At one low elevation site, the surrounding vegetation is Mohave Desert Scrub. The higher elevation sites are located within the Great Basin

Conifer Woodland and Plains, and the Great Basin Grassland (Hughes 1991). The species is found at elevations of 2,800–5,400 feet (850–1,650 meters).

When the species was listed as endangered in 1979 (44 FR 61786), the amount of habitat was unknown but presumed to be small. The total amount of occupied habitat remains unknown but extensive surveys conducted by the Bureau of Land Management (BLM), Arizona Strip District (Hughes 1991) have documented the species on 42,100 acres (17,000 hectares) of habitat. The species will likely be found outside this area. The Moenkopi Formation covers approximately 330,000 acres (134,000 hectares) in this area of the Arizona Strip; some unknown fraction of this substrate type is potential habitat for *P. sileri*.

At the time the plant was proposed for listing, fewer than 1,000 individuals were thought to exist (Phillips, *et al.* 1979). Since that time many more plants have been discovered. *Pediocactus sileri* has a distribution typical of many plant species, a high density in some areas (Hughes 1991, Gierisch 1981) and a low density in others (Gierisch 1981, L. Hughes, BLM, St. George, Utah, pers. comm., 1988). Low density areas may support approximately 10–30 *P. sileri* plants per square mile (26–78 plants per square kilometer) (L. Hughes, pers. comm., 1992). By contrast, the high density population at Warner Ridge contains 15–23 plants per acre (4–12 plants per hectare) (Gierisch 1989). A map prepared by BLM in 1988 shows three high-density areas, widely scattered across the Arizona Strip. These areas ranged in number of plants from 2,691 to 3,775, an underestimate because all plants were not counted. The three dense populations occupy an area of about 4,100 acres (1,700 hectares).

The majority of *P. sileri* habitat is managed by the Arizona Strip and Cedar City Districts of BLM. Some habitat occurs on the Kaibab-Paiute Indian Reservation, but no surveys have occurred there. A small amount of habitat is privately owned.

The 1979 final rule to list *Pediocactus sileri* as endangered identified gypsum mining, off-road vehicle use, road construction, illegal collection, livestock grazing, construction of the proposed Warner Valley Power Plant and associated structures, and the inadequacy of regulatory mechanisms as threats to the species. The Service believed that the specialized soil type, small numbers of individuals, population disjunction, and possibly a restricted gene pool could have intensified adverse effects to *P. sileri* and its habitat. Since the species was listed, a number of recovery activities have occurred, including the completion of some management documents.

In 1985, the BLM established permanent *P. sileri* monitoring plots to collect demographic and phenologic data and determine the status of the monitored populations. The BLM has reported these data annually to the Service and has most recently summarized them in Hughes (1991). Some data analysis has occurred, but more sophisticated methods should be employed to determine the long term viability of the monitored populations.

The Siler Pincushion Cactus Recovery Plan was finalized in 1986 (U.S. Fish and Wildlife Service 1986). The plan set forth the following five reclassification criteria: (1) Known populations should be censused and mapped; (2) the BLM should establish monitoring plots that can be relocated and census these at least annually; (3) the BLM should develop an approved Habitat Management Plan (HMP), which includes steps to ensure the protection of the species; (4) the BLM should develop a Mineral Feasibility Report assessing the present and potential value of the habitat for mining of gypsum, selenites, and uranium; and, (5) the BLM should administer mining claims within known populations, mitigate adverse effects, and initiate section 7 consultations when necessary. The necessary criteria for delisting are: (1) Demonstration of long-term population stability; (2) demonstration that reclassification criteria are suitable; (3) continued assurance of no mining or new claims in known habitat; and, (4) implementation of actions identified in the HMP.

The Arizona Strip and Cedar City Districts of the BLM finalized the *P. sileri* Habitat Management Plan (HMP) in 1987. Planned actions of the HMP included continuation of monitoring studies, closing and signing the Warner Ridge/Beehive Dome area to off-highway vehicles (OHVs), building an exclosure fence around a specific dense population, evaluating all surface disturbing activities through the NEPA process, and placing raptor roost poles where small mammal herbivory is a problem.

In 1990, the Arizona Strip District and the Dixie Resource Area of the BLM completed their Resource Management Plans (RMPs) and Final Environmental Impact Statements (U.S. Department of the Interior 1990a and 1990b). The RMPs guide the management of *P. sileri* habitat at a programmatic level. Both documents designate Areas of Critical Environmental Concern (ACECs), which have management prescriptions designed for conservation of *P. sileri* and other resource values. Other resource management decisions made in the RMPs include OHV management areas, livestock management goals, and locatable and mineral materials management. The specific management direction given by the RMPs and its affect on *P. sileri* is discussed below where appropriate.

Summary of Factors Affecting the Species

Section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act set for the procedures for reclassifying species on the Federal lists. A species may be listed or reclassified as threatened or endangered due to one or more of the five factors described in section 4(a)(1). These factors and their application to *Pediocactus sileri* (Engelm. ex Coult.) L. Benson (Siler pincushion cactus) are as follows:

A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range

The habitat of *Pediocactus sileri* occurs in an area called the Arizona Strip, a remote and essentially uninhabited area. Commercial uses of *P. sileri* habitat include recreation, livestock grazing, and mining. Habitat loss and degradation due to road building, housing and commercial development, off-highway traffic, and other sources is likely to increase as human populations in the nearby towns of St. George and Kanab, Utah, and Fredonia, Arizona, increase.

Off-highway traffic is adversely affecting *P. sileri* and its habitat at a few localities, including Atkin Well, the Warner Ridge/Fort Pierce area near St. George, Utah, and the area near Fredonia, Arizona, and Kanab, Utah. The convenient location of the latter two areas, the gently rolling hills, and sparse vegetation make these localities attractive sites for OHV users. Observations and data from monitoring plots indicate that few *P. sileri* deaths were directly caused by OHVs, but that the OHV traffic is fairly frequent. Gierisch (1990) found that 8 out of 1,153 cacti were killed by OHV activity on Warner Ridge. In 1985, one plant was killed and six plants were run over by OHVs out of 7,000 plants counted (Bureau of Land Management 1985). Although Gierisch (1989) found no *P. sileri* mortality due to OHVs in plots on Warner Ridge, he observed 5–16 injured

or destroyed plants outside the plots. He also noted that 33 of 60 plots contained single tracks of OHVs, and five of the 60 plots contained OHV trails that had been used repeatedly. A site near Kanab/Fredonia is heavily impacted by OHVs and other recreational uses but no data are available on their direct or indirect effects on the cactus.

The BLM Arizona Strip District Resource Management Plan and Final Environmental Impact Statement (U.S. Department of the Interior 1990a) and the Dixie Resource Management Plan and Environmental Impact Statement (U.S. Department of Interior the 1990b) contain OHV designations for the District and Resource Area. Off-highway traffic is permitted to varying levels throughout the range of *P. sileri*. The Warner Ridge area is closed to OHV traffic. The area, which also contains another endangered plant, is not fenced to exclude OHVs, but signs have been placed every 0.25 miles. Nearby, in the Fort Pierce area, where a dense population of *P. sileri* occurs, the BLM permits OHV traffic on designated roads and trails. On 800 acres (320 hectares) east of Kanab and Fredonia, in a dense population of *P. sileri*, off-road vehicle traffic is unrestricted. The Rhino Rally, an OHV event, takes place within the central habitat of *P. sileri*, in an area designated as an "OHV event area" in the Arizona Strip District RMP. The BLM limits the Rhino Rally to 300 entrants and restricts the event primarily to roads and washes.

Livestock grazing occurs throughout the habitat of Siler pincushion cactus. The Service presumes that the BLM has not changed term permits, stocking rates, or grazing systems since the species was listed, because no formal or informal section 7 consultations regarding existing range management or a change in management have occurred. In addition, livestock waters have not been moved away from dense *P. sileri* populations. The Service can not assess the affects of livestock on *P. sileri* on the Kaibab-Paiute Indian Reservation due to a lack of information.

Livestock use appears to be light or moderate in areas relatively distant from water sources because forage is very sparse on the soils preferred by *P. sileri*. In these areas, little trampling occurs and *P. sileri* plants can be found in open, unprotected microsites (Gierisch and Anderson 1980). Gierisch (1989) states that no *Pediocactus sileri* plants were destroyed due to livestock trampling on Warner Ridge. In earlier studies, he found 6 plants out of 1,153 were killed by livestock (Gierisch 1980). Gierisch (1989) found livestock tracks in 90 percent of the plots on Warner Ridge, indicating that cattle do travel through the area.

Hughes (1991) also found that livestock rarely trampled mature plants in monitoring plots. He speculated (pers. comm., 1992) that mature cacti are large enough that cattle walk around them rather than step on them. However, seedlings and juvenile plants may be too small to be seen and avoided.

At watering areas where livestock concentrate, damage or destruction of *P. sileri* is "undoubtedly severe" (Gierisch and Anderson 1980). At Atkin Well, where livestock are severely affecting the habitat, *P. sileri* plants grow in the shrub understory or along drainage slopes, areas protected from the trampling of cattle moving to and from this water source (Gierisch and Anderson 1980). Several years later, Atkin Well and Lytle Spring populations showed a size class distribution with a small number of short cacti and a large number of tall cacti, which was judged to be of "special concern" (Bureau of Land Management 1985).

Erosion has been identified as a source of mortality for *Pediocactus sileri* (Gierisch 1981, Hughes 1991). Because the substrate is erodible, a low rate of mortality due to erosion is not unexpected and probably natural. However, OHV traffic, roads, overgrazed habitat, or livestock concentration areas may cause increased erosion, resulting in increased cactus mortality rates and loss of habitat.

In 1989, the Arizona Department of Agriculture, U.S. Department of Agriculture Animal and Plant Health Inspection Service (APHIS), and local ranchers proposed a large-scale (approximately 125 square miles, or 323 square kilometers) application of a general pesticide to control a grasshopper infestation. Although the BLM did not approve the project, the Service anticipates that rangeland pesticide applications will be proposed in the future.

Through funding from the APHIS, the U.S. Department of Agriculture Bee Biology Lab in Logan, Utah, has conducted research to understand the potential effects of rangeland pesticides on endangered and threatened plants. This research has improved our understanding of the pollination and reproductive ecology of *P. sileri*. Tepedino (1990) reported that the species is pollinated by small native bees, two of them undescribed and one very rare in collections.

Mineral exploration and development, and oil and gas leasing may contribute to Siler pinchusion cactus habitat loss and degradation. Currently, adverse effects appear to be occurring at a slow rate and affecting small amounts of habitat or number of plants. One Mineral Feasibility Report (Swapp 1985) addressed the threat of uranium mining within high density *P. sileri* habitat and concluded that uranium exploration was extremely unlikely there. Another Mineral Feasibility Report (Cormier 1985) for the Warner Ridge area did not specifically address uranium mining feasibility. However, in a survey of 246 Mining Plans of Operation (MPO) for uranium mining filed between 1980 and 1985, the BLM found that 165 occurred outside potential habitat of *P. sileri* (Bureau of Land Management 1985). Of the remaining 81 MPOs occurring within potential habitat, 51 were surveyed and did not contain *P. sileri*. The remaining 30 sites within potential habitat were surveyed, contained *P. sileri*, and projects were modified to avoid directly affecting the plants. About 5 acres were disturbed at each of the 30 sites within potential habitat. Activity has taken place within low density *P. sileri* habitat, except for one core drilling in high density habitat. Wenrich and Sutphin (1988) identify low density *P. sileri* habitat as having potential for economically important uranium deposits.

Gypsum mining or exploration is unlikely to occur in the Warner Ridge or the Lost Spring Mountain habitats of *P. sileri* (Swapp 1985, Cormier 1985). The BLM believes mining gypsum is economically feasible if the gypsum (calcium sulfate) content exceeds 90 percent (Swapp 1985, Cormier 1985). The gypsum content of the Shnabkaib and Middle Red Members of the Moenkopi Formation has been variously estimated at 3–5 percent (Swapp 1985) or up to 25 percent (Stewart *et al.* 1972). Either estimate is well below the 90 percent level needed to sustain an economically viable operation.

Mineral exploration and development is permitted to occur within the five ACECs designated to provide special management prescriptions for *P. sileri* (U.S. Department of the Interior 1990a and 1990b). If mineral exploration and development is proposed within ACECs, the BLM requires a plan of operation and special mitigation. These requirements do not necessarily apply outside of ACECs. Therefore, not all habitat or populations are covered by this protection.

Oil and gas exploration or drilling is another potential threat to *Pediocactus sileri*, although currently the threat is minor. Essentially all areas within the Moenkopi Formation are under oil and

gas leases (Bureau of Land Management 1985). As recently as 1990, the BLM offered at least one tract containing *P. sileri* for a competitive oil and gas lease sale (BLM Minerals Staff, Arizona Strip District, St. George, Utah, pers. comm., 1990). However, there are no producing oil wells nor any history of wells in the Arizona Strip District or southwestern Utah (Bureau of Land Management 1985).

In summary, mining and mineral exploration and oil and gas leases are currently a minor threat to *P. sileri*. The probability of gypsum mining and active oil and gas pumping appears to be small. Uranium exploration is occurring and has already taken some habitat. Although the current economic situation seems to have slowed uranium exploration, the future is uncertain.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Despite the legal protections offered by the Act and the Arizona Native Plant Law (Arizona Revised Statutes Chapter 7, Title 3, Article 1), *P. sileri* is collected by cactus enthusiasts for commercial purposes and private interest. Steve Brack, who is familiar with the worldwide cactus trade, believes cultivated and wild-collected plants are rare in the cactus trade because the species has a reputation for being hard to grow (S. Brack, Mesa Gardens, Belen, New Mexico, pers. comm., 1992). He estimates that 99 percent of transplanted plants will die within two years. Seeds germinate readily, but, due to a narrow tolerance for soil type and environmental conditions, the plants mature only with great effort and skillful technique. Grafting, a technique commonly used to commercially propagate the endangered *Pediocactus bradyi*, is not commonly used with *P. sileri* because the latter species is too large and slow growing.

Brack (pers. comm., 1992) noted that the seeds of *P. sileri* are readily available in the commercial trade and he assumed the seeds are taken from wild populations. He estimated that a collector could take 5,000 seeds from a dense population in one afternoon. The Service does not have the information needed to assess the degree to which seed collecting is affecting populations.

Although serious hobbyists and professional collectors apparently avoid taking living plants from the wild, other collectors, such as the occasional tourist, resident, or unscrupulous seller could be collecting some plants. The effects of this are very difficult to quantify but are probably minor.

C. Disease or Predation

Various botanists have noted mortality of *P. sileri* due to disease, insects, and rodents. Within study plots, Gierisch (1989) noted that 28–32 percent of all stems were dead and he believed mortality was due to disease and predation. Hughes (1991) reported that the most common source of *P. sileri* mortality was herbivory. Rodents and rabbits apparently find the plants palatable, particularly during years of below-average rainfall when other food and water sources are scarce. Small mammals may attack from the top or from underground and consume the whole plant (Gierisch 1991).

In at least one case, data indicate that *P. sileri* mortality from small mammal populations may be affected by management practices. Plants inside a fenced area excluding cattle were more likely to die from small mammal herbivory than plants outside the exclosure (Hughes 1991). Hughes (pers. comm., 1988) speculated that small mammals preferred the habitat inside the exclosure because it had greater plant cover and food.

Brack (1983) noted heavy insect damage to a *P. sileri* population. Insects had eaten the cortical tissues and roots of about 80 percent of the plants. He believed that the damaged plants would die.

Although insects, disease, and small mammal herbivory may appear to be natural causes of mortality, we do not know if the current disease or predation rates are at natural levels or are imbalanced for some reason. Analysis of data from long-term monitoring should be able to determine if recruitment rates in populations with disease or predation are sufficient to maintain viable populations.

D. The Inadequacy of Existing Regulatory Mechanisms

Pediocactus sileri is currently protected by the Act and is contained in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (16 U.S.A. § 1538(c)). It is also protected from commercial use by the Arizona Native Plant Law (A.R.S. §§ 3–901 *et seq.*). If the proposed reclassification to threatened status becomes final, there will be no substantive change in the protection afforded this species under these regulatory mechanisms. Existing regulatory mechanisms determined necessary to protect this species and its habitat will remain in effect.

E. Other Natural or Manmade Factors Affecting Its Continued Existence

The long-term viability of populations of this species is still uncertain. Since 1985, the BLM Arizona Strip District has been collecting demographic data in four dense population areas across the range of this species. A population viability analysis could probably determine if the dense population areas are reproducing sufficiently to maintain population size.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining to propose this rule. Based on this evaluation, the preferred action is to reclassify *Pediocactus sileri* from endangered to threatened. New information gathered by the BLM, as well as recovery efforts for the species have changed our understanding of the range, abundance, and magnitude and relative importance of threats to *P. sileri*. Although the species is more abundant than originally believed in 1979, only three large populations are known. We do not know if the species is able to maintain stable populations given current habitat conditions, but the BLM is accumulating data that will assist in that determination. The remaining manageable threats to the species include livestock grazing and associated developments, off-highway vehicle traffic, pesticide applications, and mineral exploration. With more plants known to exist, we now believe the magnitude of threats to be less important than when the species was listed.

Critical habitat for Siler pincushion cactus was not designated in 1979 when the species was listed because the Service believed the action was not prudent. The Service continues to believe that designating critical habitat is not prudent. As discussed under Factor B in the Summary of Factors Affecting the Species, Siler pincushion cactus is threatened by taking, an activity difficult to enforce against and only regulated by the Act with respect to plants in cases of (1) removal and reduction to possession of listed plants from lands under Federal jurisdiction, or their malicious damage or destruction on such lands; and (2) removal, cutting, digging up, or damaging or destroying in knowing violation of any State law or regulation, including State criminal trespass law. Such provisions are difficult to enforce, and publication of critical habitat descriptions and maps would make Siler pincushion cactus more vulnerable and increase

enforcement problems. Therefore, it remains not prudent to determine critical habitat for Siler pincushion cactus.

Effects of Rule

This rule, if made final, would change the status of *Pediocactus sileri* from endangered to threatened. The final rule would formally recognize that *P. sileri* is no longer considered to be in danger of extinction throughout all or a significant portion of its range. Reclassifying the species will have little effect on regulations regarding protection and recovery of the species. Protection given to threatened species under sections 7 and 9 of the Act is essentially the same as that given to endangered species, except seeds from cultivated specimens of threatened plants are exempt from the trade prohibitions of section 9(a)(2) of the Act, provided that a statement of "cultivated origin" appears on their containers. Recovery provisions are the same for threatened species as for endangered species.

This action will not be an irreversible commitment on the part of the Service. The action is reversible and reclassifying *P. sileri* to endangered would be possible should changes occur in management, habitat, or other factors that alter the present threats to the species' survival and recovery.

Public Comments Solicited

The Service intends that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning any aspect of this proposed rule are hereby solicited. Comments particularly are sought concerning:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to this species;

(2) The location of any additional populations of this species;

(3) Additional information concerning the range, distribution, and population size of this species; and

(4) Current or planned activities in the subject area and their possible impacts on this species.

Final promulgation of the regulation on this species will take into consideration the comments and any additional information received by the Service, and such communications may lead to a final regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be received within 45 days of the date of publication of the proposal. Such requests must be made in writing and addressed to the Field Supervisor (see **ADDRESSES**).

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

References Cited

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Author

The primary author of this proposed rule is Sue Rutman (see **ADDRESSES** section).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Proposed Regulation Promulgation

PART 17—[AMENDED]

Accordingly, it is hereby proposed to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500; unless otherwise noted.

2. It is proposed to amend § 17.12(h) by revising the entry for *Pediocactus sileri* under the family Cactaceae to read as follows:

§ 17.12 Endangered and threatened plants.

* * * * *

(h) * * *

Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
•	•	•	•	•		•
Cactaceae—Cactus family:						
•	•	•	•	•		•
Pediocactus sileri (=*Echinocactus s.*, *Utahia s.*).	Siler pincushion cactus	U.S.A. (AZ, UT)	T	64,_____	NA	NA
•	•	•	•	•		•

Dated: February 25, 1993.

Richard N. Smith,

Acting Deputy Director, Fish and Wildlife Service.

[FR Doc. 93–5494 Filed 3–9–93; 8:45 am]

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